



Research Article

## EFFECTS OF FATTY ACID COMPOSITION AND TEMPERATURE ON TEXTURE AND SPREADABILITY: A COMPARATIVE STUDY OF BUTTER AND LARD

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**ABSTRACT**

Animal fats play a crucial role in enhancing food production and improving the emulsion qualities, texture, acceptability, and palatability of products. Therefore, the current research focused on analyzing butter and lard's chemical composition and fatty acid profiles, investigating their impact on textural properties and spreadability under varying temperature conditions. The predominant fatty acids identified in the butter samples were palmitic, oleic, stearic, and myristic. Arachidic fatty acid was only quantified in the lard samples. Among the monounsaturated fatty acids, lard samples exhibited the highest concentration at 39.67%, with oleic acid being the most prominent at 38.99%. The lard samples showed a lower hardness compared to the butter samples. The lard samples have the highest spread capacity at 10±2 °C (55.9 N·mm) between the analyzed samples and also at 20±2 °C (7.7 N·mm). The higher hardness and lower spread capacity of butter compared to lard at both temperatures (10±2 °C and 20±2 °C) are due to its high proportion of saturated fatty acids. The unpaired Student-T test between butter and lard hardness (Hs) and spreadability (S) highlighted a significant difference at a level of  $p < 0.001$ . The textural characteristics of analyzed fats are influenced not only by temperature but also by their fatty acid composition.

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